



#5 D.J. 66-04681
IDS ~~by [signature]~~

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: W.D. Grover et al.

Attorney Docket No.: LAMA118219

Application No.: 10/016,272

Group Art Unit: 2681

Filed: November 2, 2001

Title: TOPOLOGICAL DESIGN OF SURVIVABLE MESH-BASED TRANSPORT NETWORKS

INFORMATION DISCLOSURE STATEMENT

Seattle, Washington 98101 **RECEIVED**

May 4, 2004

MAY 07 2004

TO THE COMMISSIONER FOR PATENTS:

Technology Center 2600

Applicants are aware of the information listed in the attached form that may be material to the prosecution of the above-identified patent application.

1. Copies of the listed patents, publications, and other information are enclosed for the Examiner's use.
2. Pursuant to 37 C.F.R. § 1.97(b), this Information Disclosure Statement is being filed within three months of the filing date of the national application (other than a CPA), within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application, before the mailing date of a first Office Action on the merits, or before the mailing date of a first Office Action after the filing of an RCE.

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3. X The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§ 1.16, 1.17 and 1.18 which may be required during the entire pendency of the application, or credit any overpayment, to Deposit Account No. 03-1740. This authorization also hereby includes a request for any extensions of time of the appropriate length required upon the filing of any reply during the entire prosecution of this application.

Respectfully submitted,

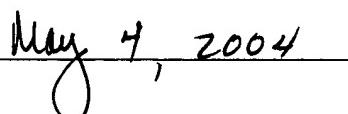
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Examiner: Unknown

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United States Patent Documents

Examiner <u>Initial</u>	Document <u>Number</u>	Date	Name	<u>Class</u>	<u>Sub Class</u>
____ A1	5,850,505	12/15/98	Grover et al.	395	182.02
____ A2	6,377,543 B1	04/23/02	Grover et al.	370	227
____ A3	6,052,796	04/18/00	Croslin	714	4
____ A4	6,421,349 B1	07/16/02 (Corresponds to C3 listed below)	Grover	370	408
____ A5	6,404,734	06/11/02 (Corresponds to C5 listed below)	Stamatelakis	370	227
____ A6	2002/0071392	06/13/2002 (Corresponds to C11 listed below)	Grover et al.	370	241
____ A7	6,154,296	11/28/2000	Elahmadi et al.	259	119

Other Information

(Include author, title, date of publication to extent known, relevant pages, and place of publication if known)

Examiner
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____ C1 A photocopy of Canadian Patent Application No. 2,161,847, filed October 31, 1995
(published May 1, 1997), including drawings and filing certificate, 32 pages.



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Initial ID Document Identification

- C2 A photocopy of Canadian Patent Application No. 2,212,933, filed August 13, 1997 (published February 13, 1999), including drawings and filing certificate, 154 pages.
- C3 A photocopy of Canadian Patent Application No. 2,210,207, filed July 11, 1997 (published January 11, 1999), including drawings and filing certificate, 93 pages. (Corresponds to A4 listed above.)
- C4 A photocopy of Canadian Patent Application No. 2,269,649, filed April 22, 1999 (published October 22, 2000), including drawings and filing certificate, 21 pages. (Corresponds to C8 listed below.)
- C5 A photocopy of Canadian Patent Application No. 2,280,981, filed August 27, 1999 (published April 6, 2000), including drawings and filing certificate, 22 pages. (Corresponds to A5 listed above.)
- C6 A photocopy of Canadian Patent Application No. 2,285,101, filed October 6, 1999 (published April 8, 2000), including drawings and filing certificate, 38 pages. (Corresponds to C9 listed below.)
- C7 A photocopy of Canadian Patent Application No. 2,307,520, filed April 28, 2000 (published October 29, 2000), including drawings and filing certificate, 131 pages. (Corresponds to C10 listed below.)
- C8 A photocopy of U.S. Patent Application No. 09/314,518, filed May 19, 1999, including drawings and filing certificate, 21 pages. (Corresponds to C4 listed above.)
- C9 A photocopy of U.S. Patent Application No. 09/414,474, filed October 7, 1999, including drawings and filing certificate, 38 pages. (Corresponds to C6 listed above.)
- C10 A photocopy of U.S. Patent Application No. 09/561,355, filed April 28, 2000, including drawings and filing certificate, 125 pages. (Corresponds to C7 listed above.)



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- ____ C11 A photocopy of Canadian Patent Application No. 2,359,168, filed October 16, 2001, including drawings and filing certificate, 51 pages. (Corresponds to A6 listed above.)
- ____ C12 "Protection Cycles in Mesh WDM Networks", Ellinas, G, Hailemariam, A. G., Stern, T. E.; *IEEE Journal on Selected Areas in Communications*, Vol. 18, No. 10, October 2000.
- ____ C13 "MENTOR: an algorithm for mesh network topological optimization and routing", G. Grover, A. Kershenbaum, P. Kermani, *IEEE Transaction on Communications*, Vol. 39, p. 503-513, 1991.
- ____ C14 "Algorithms for the Spare Capacity Design of Mesh Resorable Networks", B. D. Venables, M.Sc. Thesis, University of Alberta, Edmonton, 1992.
- ____ C15 "Optimal capacity placement for path restoration in STM and ATM mesh-survivable networks", R. R. Iraschko, M. H. MacGregor, W. D. Grover, *IEEE/ACM Transactions on Networking*, Vol. 6, No. 3, pp. 325-336, June 1998.
- ____ C16 "Near optimal spare capacity planning in a mesh restorable network", W. D. Grover, T. D. Bilodeau, B. D. Venables, *IEEE Globecom '91*, pp. 2007-2012, 1991.
- ____ C17 "A fast heuristic principle for spare capacity placement in mesh-restorable SONET/SDH transport networks", *Electronics Letters*, Vol. 33, No. 3, pp. 195-196, Jan. 30, 1997.
- ____ C18 "Two strategies for spare capacity placement in mesh restorable networks", B. D. Venables, W. Grover, M. H. MacGregor, *Proceedings of the IEEE ICC '93*, Geneva, pp. 267-271, May 1993.
- ____ C19 "Comparative methods and issues in design of mesh-restorable STM and ATM networks", W.D. Grover, R.R. Iraschko, Y. Zheng, *Telecommunication Network Planning*, pp. 169-200, editors: B. Sanso and P. Soriano, Kluwer Academic Publishers, 1999.



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- _____ C20 "A self-healing network with an economical spare-channel assignment", H. Sakauchi, Y. Nishimura, S. Hasegawa, *Proc. IEEE Globecom*, (1990) pp 438-443.
- _____ C21 "An optimal spare-capacity assignment model for survivable networks with hop limits," M. Herzberg, and S. Bye, *Proc. IEEE GLOBECOM '94*, pp. 1601-1607, 1994.
- _____ C22 "Distributed self-healing network and its optimum spare capacity assignment algorithm", Chujo, T., Komine, H., Miyazaki, K., Ogura, T., Soejima, T., *Electronics and Commun. in Japan*, part 1, vol. 74, no. 7, 1991, pp. 1-8.
- _____ C23 "A unified approach to network survivability for teletraffic networks: models, algorithms and analysis", D. Medhi, *IEEE Trans. on Communications*, vol.42, 1994, pp.534-548.
- _____ C24 T. Cinkler, T. Henk, G. Gordos, "Stochastic algorithms for thrifty single-failure-protected networks", in *Proc. Design of Reliable Communication Networks*, Munich, Germany April 2000, pp. 299-303.
- _____ C25 Y. Wang, *Modelling and solving single and multiple facility restoration problems*, Ph.D. dissertation, Sloan School of Management, MIT, June 1998., pp.32-33.
- _____ C26 W.D. Grover, "Distributed Restoration of the Transport Network", in *Network Management into the 21st Century*, editors T. Plevyak, S. Aidarous, IEEE / IEE Press co-publication, Chapter 11, pp. 337-417, Feb. 1994.
- _____ C27 W.D. Grover, "Self-organizing Broad-band Transport Networks", *Proceedings of the IEEE Special Issue on Communications in the 21st Century*, vol. 85, no.10, October 1997, pp. 1582-1611.
- _____ C28 Y. Xiong; L.G. Mason, "Restoration strategies and spare capacity requirements in self-healing ATM networks" *IEEE/ACM Transactions on Networking*, Volume: 7 Issue: 1, Feb. 1999, pp. 98 -110.



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- ____ C29 J. L. Kennington, M.W. Lewis, The Path Restoration Version of the Spare Capacity Allocation Problem with Modularity Restrictions: Models, Algorithms, and an Empirical Analysis, *Technical Report 98-CSE-13*, Department of Computer Science And Engineering, Southern Methodist University, Dallas, December 1998.
- ____ C30 Rainer R. Iraschko, "Path Restorable Networks", PhD Thesis, University of Alberta, chapter 4, pp. 56-85, Fall 1996.
- ____ C31 M. H. MacGregor, W. D. Grover, "Optimized k -shortest-path Algorithm for Facility Restoration", *Software-Practice and Experience*, Vol. 24, No. 9, September 1994, pp. 823-834.
- ____ C32 I. Saniee, "Optimal Routing Designs in Self-Healing Communications Networks", *Bellcore, MRE 2D-362*, May 1994, 10 pages.
- ____ C33 "Introduction to SONET Networking", NORTEL tutorial handbook, Oct. 30, 1996.
- ____ C34 R.R. Iraschko, M.H. Mac Gregor, W.D. Grover, "Optimal Capacity Placement for Path Resoration in Mesh Survivable Networks", IEEE, 1996, pages 1568 – 1574.
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- ____ C36 W.D. Grover, "Network Survivability: A Crucial Issue for the Information Society", IEEE Canadian Review, No. 27, Summer 1997, pages 16 – 21.
- ____ C37 W.D. Grover, D. Stamatelakis, "Cycle-Oriented Distributed Preconfiguration: Ring-like Speed with Mesh-like Capacity for Self-planning Network Restoration.", Proceedings of IEEE ICC 1998, 7 pages.



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